Foodborne Disease Outbreak Manual

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1. Foodborne Disease Outbreak

A foodborne disease outbreak is defined as an incident in which (A) two or more persons experience a similar illness, usually gastrointestinal, after ingesting a common food, and (B) epidemiologic analysis implicates food as the source of the illness. Exceptions to this definition are botulism and chemical poisoning, when one case constitutes an outbreak. (*Foodborne Disease Surveillance, 1981 Annual Summary*. Centers for Disease Control, issued April 1983.)

2 Categories of Cases

Outbreak-Related: individuals meet clinical laboratory and epidemiologic criteria for a case.

2.1 Clinical criteria

- 2.1.1 Symptomatic case: an individual who is ill with symptoms compatible with the disease in question.
- 2.1.2 Asymptomatic case: an individual who is not ill but who meets the laboratory criteria for a case.

2.2 Laboratory criteria:

- 2.2.1 Confirmed case: an individual for whom definitive laboratory evidence of the etiologic agent or disease has been obtained.
- 2.2.2 Presumptive case: an individual having presumptive laboratory evidence of disease. (i.e. Serology positive; culture negative)
- 2.2.3 Suspect case: an individual having signs and symptoms compatible with the illness.

2.3 Epidemiologic criteria:

An individual who meets the person, time and place factors associated with the illness.

2.3.1 Afflicted Individual: A person with signs and symptoms of illness who consumed one or more suspect food items.

2.3.2 Nonafflicted Individual: A person who consumed one or more suspect foods without showing any signs of illness.

2.3.3 Nonoutbreak Related: Individuals who meet the clinical and laboratory criteria but not epidemiologic criteria.

3 Place Of Outbreak

Place where suspect foods and/or beverages were prepared and/or consumed by the afflicted and nonafflicted individuals. These places include but are not limited to:

3.1 Commercial retail food establishments (restaurants, fast food stores, retail markets, etc.)

3.2 Nursing homes

3.3 Hospital food service facilities

3.4 Private gatherings and parties

3.5 Public and private institutions (includes public and private schools, day care centers, community residences, etc.)

4 Source Of Reports

Reports of illness are likely to be received from one or more of the following sources:

4.1 Afflicted or nonafflicted individuals

4.2 Hospital emergency rooms

4.3 Poison control centers

4.4 Local boards of health, health agencies, or TDH regional offices

4.5 Other local authorities

4.6 Public and private institutions

4.7 Physicians

4.8 Laboratories

4.9 Infection control practitioners

5 Food Sample

Sample from any suspect foods or beverages that were implicated in the outbreak investigation.

5.1 Original food sample: Sample which is taken from the original food consumed at time of outbreak.

5.2 Control Sample: A portion of food prepared in a similar manner to the original but not involved in the outbreak.

6 Clinical Specimens

6.1 Stool specimen, including rectal swabs

6.2 Blood sample

6.3 Vomitus (for toxins testing only)

6.4 Swab for nasopharynx and skin lesions

6.5 Urine

* Based on the nature of the illness, one or more of the above clinical specimens may be obtained.

7 The Foodborne Disease Investigation Process

7.1 Awareness:

Typically, health agencies become aware of illnesses which may possibly be associated with commercial retail food establishments, or commercial food products in these ways:

7.1.1 an ill individual telephones because he suspects a restaurant or commercial product may be involved.

7.1.2 a physician or hospital emergency room staff telephones after seeing one or more individuals with ‘food poisoning.’

7.1.3 a case or cases of reportable diagnosed illness which may be commonly associated with food consumption are noted.

7.1.4 laboratory findings suggest a common source outbreak.

7.2 Preliminary information:

When these types of complaints occur, **preliminary** information may need to be gathered regarding:

- those who are ill
- their name
- their age, race and sex
- when they became ill
- their occupation
- what are the known common exposures
- estimated number exposed
- other persons known to be experiencing similar illness
- signs or symptoms that characterize the illness
- whether any clinical lab specimens have been taken

7.3 Determination:

Determine whether the illness **warrants investigation**:

7.3.1 **It does** for certain foodborne diseases even if there is only a single case (such as botulism or chemical poisoning).

7.3.2 It warrants investigation if the case or cases are reportable conditions or there is a **group outbreak** of a similar illness.

7.3.3 It warrants investigation if a commercial product or commercial retail food establishment product is a reasonable suspect. In this case the

illness must have an incubation period and symptoms that are consistent with timing and nature of the suspect food(s).

7.4 Based on signs and symptoms, collect food exposure histories for ill persons and people they ate with who were not ill within the applicable time frame.

8 The Foodborne Disease Investigation Team [FBIT]

It is recommended that the Foodborne Disease Investigation Team have the following members and be trained in foodborne disease investigation techniques. Depending on the signs and symptoms and implications of the outbreak, the team may be enhanced by regional, central office, and occasionally federal members. The recommended team members are: epidemiologist, public health nurse, sanitarian, laboratorian, public relations spokesperson, and local or regional health officers.

8.1 Epidemiologist develops, administers epidemiological questionnaire to both ill [patients] and well [controls], analyzes data, and recommends specimen collection to support the developed hypothesis based on the questionnaire's results.

8.2 Public Health Nurse assists the epidemiologist in the development and administration of the questionnaire and hypothesis development. The public health nurse is responsible for collection and shipment of patient laboratory specimens. Shipment is coordinated with the sanitarian. Interviews coordinated with the epidemiologist and the sanitarian.

8.3 Sanitarian collects and ships implicated food items, conducts facilities inspections of the implicated food preparation facility, and interviews the food preparation staff regarding their preparation of the suspect food. If food and clinical samples are ready for shipment, sanitatian and the public health nurse should coordinated the shipment. Food preparation staff interviews are coordinated with epidemiologist and public health nurse.

8.4 Laboratorian advises the FBIT on sample collection and packaging for transport, and recommends which laboratory protocol(s) (tests) to order based on the patients' signs and symptoms and the suspect food(s).

8.5 Public Relations Spokesperson manages the news media through press releases and conferences. (May be designated at the beginning of the investigation.) Close coodination of news release information with TDH departments is strongly encouraged.

8.6 Local or regional health officers are executive members of the FBIT.

9 Epidemiologist and Public Health Nurse Team Duties:

9.1 If warranted, a more detailed investigation should be attempted to determine the mode of transmission, and the deficiencies which may have led to transmission, in order to prevent further illnesses.

9.2 Epidemiologist develops a specific **CASE Investigation Form (questionnaire)** based on the information gathered up to this point. Both the Epidemiologist and the Public Health Nurse administer the questionnaire to both affected individual and controls. Sanitarian may assist. This questionnaire includes, but is not limited to, the following mandatory information about the patient(s) and controls including:

- name
- age and birth date
- sex
- address
- phone number
- race
- ethnicity
- occupation
- place of employment or school
- physician's name, address and phone number if applicable
- concurrent or chronic illness
- onset of symptoms

9.3 The questionnaire should include information on:

- 9.3.1 type of clinical symptoms
- 9.3.2 type of chemical exposure - mode of exposure
- 9.3.3 date or time of onset of illness
- 9.3.4 type of human specimens collected
- 9.3.5 duration of illness
- 9.3.6 results of specimen tests
- 9.3.7 whether the patient has other apparent risk factors for this illness such as:
  - 9.3.7.1 exposure to another person with a similar illness,
  - 9.3.7.2 water consumption from an unapproved source, etc.

9.4 Identify other persons at the event or restaurant who were sick (cases) and well persons (controls) to interview. Comparing food histories between those who were ill and well may help to identify specific food items involved.

9.5 Coordinate shipment of specimens with sanitarian.

10 Sanitarian Duties:

10.1 Conduct an **environmental investigation/full inspection** of the suspect facility.

10.2 If a specific establishment is strongly suspected, interview their food handlers using their menu when asking about food items consumed and about items that were served but not on the menu.

10.3 Where possible, request a hold on food samples until products are released - until suspect foods are determined not at fault.

10.4 Obtain appropriate **samples**.

10.5 Coordinate shipment of samples to laboratory.

10.6 If situation warrants, contact Manufactured Food Division about initiating product traceback and/or recall.

10.7 If a meat or poultry product under federal inspection is suspected to be the causative agent, the USDA Compliance staff in Dallas must be notified at (214) 767-9120 and kept informed.

11 Health Officer Duties:

If the illness is transmissible from person to person, take measures to prevent further spread by:

11.1 developing messages about transmission and hygiene.

11.2 removing infectious persons from food service operations

11.3 arranging for administration of preventive treatment for those who have been exposed where applicable, as with Hepatitis A (immune globulin).

11.4 being the spokesperson for department

11.5 being the primary public health representative to involved establishments

11.6 being the liaison with private sector

11.7 managing other medical concerns.

12 FBI Team Duties:

12.1 Based on information obtained from the questionnaires, the environmental inspection and laboratory results, **develop a hypothesis** as to how the illness was transmitted, through what food(s), and by what organism or agent.

12.2 **Institute control measures** based on the best hypothesis.

12.3 **Inform other agencies** of the possible outbreak, so that they are aware of the problem, and can report cases of similar illness to your agency rapidly.

12.4 **Notify** the FBILIST via the electronic bulletin board of:

12.4.1 existence of outbreak

12.4.2 ongoing findings

12.4.3 final results

so local health departments, regional and state areas of concern are aware of the outbreak, its cause, and action taken to prevent future occurrences.

12.5 Verify that the **control measures** are in effect and working, and prepare a report on the outbreak investigation, distributing it to appropriate agencies or persons.

12.6 FBILIST is available to individuals so that any Texas agency can log into a computer system and share information about possible foodborne outbreaks.

Remember: the order in which investigations take place will vary depending on the circumstances. Information gained through investigation may dictate that more investigation is needed to determine the cause(s) of the outbreak.

13 Laboratory Procedures

The Bureau of Laboratories analyses are performed, upon request, for Texas Department of Health programs, regional and local health departments. Coordination of testing through the department's Infectious Disease Epidemiology and Surveillance [IDEAS] division, and/or the Bureau of Food and Drug Safety is required. Investigators must obtain authorization from one of these programs **and** from the laboratory prior to submission of samples. Test(s) requested must be mutually agreed upon and the requested analysis must be based on the case(s) signs and symptoms. Consultation with the Bureau of Laboratories and either IDEAS or Food and Drug Safety is advised. Laboratory staff are available for consultation regarding these decisions, as well as specifics on sample collection, transport, and interpretation of test results.

13.1 **Food samples (use sterile implements and containers)**

13.2 food consumed during suspect meal

13.3 samples obtained at the food preparation area most likely to yield foodborne pathogens

13.4 each component or ingredient of a suspect food

13.5 collect a minimum of 100 grams (1/4 pound) and a maximum of 450 grams (1 pound) - use **STERILE** zip-top or whirlpak bags or plastic containers to hold samples

13.6 when dealing with canned or packaged food, collect unopened samples

13.7 if appropriate, swab surfaces of suspected implements, food preparation surfaces, etc. (Contact Laboratory **FIRST** for collection and shipment instructions.)

14 Food Sample Collection/Handling

Samples collected as part of the investigation should be treated as official samples and collected in a manner that reflects the food as it was prepared, served, or used in the preparation of the suspected meal.

14.1 Labeling and shipping of products.

14.1.1 Once the amount of product has been placed into the sample container, the container should be sealed with official seals, adhesive tape, or other method that will assure the integrity of the product collected until it reaches the laboratory.

Note: Very Important! Identification on sample **MUST BE** identical to identification on form [J. Smith is **NOT** identical to John Smith; flour is **NOT** identical to Gold Medal Flour]

14.2 Sample Receipt**:** Chapter 431 of the Health and Safety Code requires that a **receipt for sample** be issued to the firm at the time of collection. The following information must be collected and noted on the sample receipt or on records which may accompany the sample receipt:

14.2.1 a complete description of the item(s) collected and a description of where the sample was located at the time of collection,

14.2.2 any lot number, unit code or other identifying information on the package or unit container,

14.2.3 size of unit(s) collected (ie. 10 ounce cans, 12 ounce bottle, 6 ounce package, and

14.2.4 the name of the firm, city, date, and time of collection.

14.3 Dry Powder Samples: - Collection of dry ingredients (flour, sugar, corn meal, nuts, spices, etc.,) should be collected using an aseptic technique. Sterile collection containers and sterile spoons, spatulas, or scoops should be used when transferring the ingredients from its original container into the sterile collection container (cup or whirl-pac). Each container should be identified with the date, name of person collecting, description of sample, and identifying sample number and if necessary sub number. Once the amount of product has been placed into the sample container, the container should be sealed with official seals, adhesive tape, or other method that will assure the integrity of the product collected until it reaches the laboratory.

14.4 Canned Samples: - Commercially processed low acid foods packaged in cans or acidified foods" (packaged in cans or jars) should be collected in their original containers if possible. Containers collected should be from the same lot as the suspect food. In the event that no additional containers are available, the suspect food should be collected using an aseptic technique while transferring the material into a sterile container. If possible the original container including the lid or cap should be collected by placing in a sterile container and submitted to the respective lab. A minimum of 10 original containers with the **same lot number** of the suspect food should be collected as part of the investigation. Samples should be packed into a rigid shipping container, and identified with the collectors name, date, time, and location of collection. The shipping container should be sealed and shipped to the laboratory. In addition to the collection of the sample, copies of

shipping documents including invoices or bills of lading should be collected identifying the source of the product.

14.5 Perishable Foods Samples: - collection requires the use of sterile containers and sterile collection equipment(spoons, spatulas, and scoops). The collection of all suspected ready to eat food items must be transferred into a sterile container using an aseptic technique. Once the portion of product has been placed into a sterile container, the container should be closed and sealed with adhesive tape, official seal, or other means to maintain the product integrity until it reaches the lab. Each container should be identified with the name of the collector, date, time, and temperature of the product that the sample was collected from. Perishable foods require special handling depending on what etiological agent the product will be tested for. Samples should be packed in a shipping container that will maintain a safe holding temperature during transport (ie. Coolers provided with ice, or cool packs). Ship at appropriate temperature, frozen sample to remain frozen, cool samples (held or displayed at 32 to 45 degrees Fahrenheit) must be shipped to remain cool. Ship in insulated containers (TDH FBI box, cooler, Styrofoam chest, etc.)

14.6 Liquid Samples: - collection of liquid materials should be collected in original containers if from a commercial manufacturer. Containers should be from the same lot of product that is suspected in the investigation. Liquid samples of food products produced or prepared on site should be transferred to a sterile container using an aseptic technique. Containers should be closed and sealed with official seals provided or some other adhesive material so as to secure the sample and prevent leakage or damage during transport. The sample container should be identified with the collectors name, date, time, product identity, sample collection number, and if necessary sub sample number. Containers should be placed into the insulated containers

(TDH FBI box, cooler-well packed to prevent damage or breakage, Styrofoam chest, etc.).

14.7 Laboratory submission form (G-22) should be completed and attached to each sample, sub-sample prior to shipping to the laboratory. The form should include sample receipt number, and sub number, date, time, firm, collectors name or initials, submitting agency, product description, and any other pertinent information necessary to identify that the sample is part of an investigation of a suspected food illness. **Note: Very Important!** Identification on sample **MUST BE** identical to identification on form [J. Smith is **NOT** identical to John Smith; flour is **NOT** identical to Gold Medal Flour]

14.8 Laboratory Notification: - Prior to shipping samples to a laboratory, notify the laboratory that the sample is being shipped, along with information regarding the suspected food and what if any, chemical or microbiological agent is suspected. Coordinate with IDEAS and Bureau of Food and Drug Safety after notifying lab, if sample is submitted to TDH laboratory. If the sample is to be submitted to another agency laboratory (FDA, USDA, CDC, etc) obtain instructions on how to pack and ship samples, and to what lab to send the sample.

15 Clinical Specimens Collection/Handling

15.1 Collection of Specimen for Detection of Bacteria

15.1.1 Obtain patient stool specimens

15.1.2 Wash hands before and after collection!

15.1.3 Using either a Cary-Blair or Ames transport media, place swab in stool, or soiled diapers or underwear, rotate swab for 15 seconds,

then place in transport medium. Rectal swabs are also acceptable.

15.1.4 Label transport tube with patient's name and date of collection. **Note: Very Important!** Name on tube **MUST BE** identical to name on form [J. Smith is **NOT** identical to John Smith].

15.1.5 Complete submission form, include all information requested.

15.1.6 Ship transport medium immediately after collection: specimens older than three days are unacceptable.

15.2 Specimen Collection for Detection of Viruses

15.2.1 Collect stool specimens from patients within 48 hours of onset of symptoms.

15.2.2 If stool is formed, place at least a pea sized piece of stool in a sterile container. If stool is watery, place at least 2 mls of stool into the sterile container.

15.2.3 **Do not add** any transport media or other liquid to the specimen.

15.2.4 Label the container with the patient's name.

15.2.5 Place the container in a Styrofoam or similar insulated chest containing ice packs. Please insure there is an adequate number of ice packs to keep the specimen cold for 48 hours in the current weather conditions.

15.2.6 **Note: Very Important!** Name on tube **MUST BE** identical to name on form [J. Smith is **NOT** identical to John Smith]. Indicate the test desired as Norwalk-like viruses under the Virology Section of the form.

15.2.7 Place the form in plastic bag or other container to prevent it from getting wet from the ice packs.

15.2.8 Include the submission form in the shipping container with the specimens.

15.2.9 Ship the specimens on ice or cool packs (do not freeze) on by bus or overnight service to the Texas Department of Health.

15.3 Collection of Stool Specimen for Ova and Parasite Testing

15.3.1 Make sure the label on each specimen collection vial is filled out thoroughly and accurately. (Name, date of collection etc.) Complete a G1 specimen submission form for each specimen submitted. **Note: Very Important!** Name on tube **MUST BE** identical to name on form [J. Smith is **NOT** identical to John Smith].

15.3.2 Collect FRESH* stool specimen using the scooper at the end of the collection vial lid. In order to have an accurate results it is important to collect and return a specimen in each of the provided vials (PVA and Formalin preservative).**

15.3.3 Add enough stool specimen to each of the vials to bring the liquid preservative to the designated "fill" line indicated on the outside of the collection vial.

15.3.4 Replace the lid and tighten securely.

15.3.5 Shake each of the vials to insure the specimen is mixed well with the preservative.

15.3.6 Place both vials back in original plastic bag and place in appropriate shipping container.

15.3.7 Specimens should be sent at room temperature or on ice pack (do not freeze) along with completed specimen receiving form that matches the names on each specimen vial.

* Stool specimens should be placed in preservative no more than 2-5 hours after being passed.

** In order to receive the most accurate results for an Ova and Parasite testing, a patient should submit 3 normally passed stools collected 1-2 days apart (a total of 6 vials).

16 Specimen Shipment

PACK TO AVOID SPILLAGE OR BREAKAGE

16.1 ship at appropriate temperature - frozen sample shipped to remain frozen; cool samples shipped to remain cool.

16.2 ship in insulated container (TDH FBI Box, cooler, Styrofoam chest, etc.)

16.3 frozen food on dry ice.

16.4 perishable food (chilled foods), virus specimens on wet ice or cold pack

16.5 canned and low moisture food, parasitology specimens at ambient temperature

17 Transport

17.1 Ship samples either overnight or by bus - laboratory visits bus station twice a day during the work week and once on Saturday and on Sunday to collect shipped specimens.

17.2 Note: Laboratory results are usually available in 2-3 working days.

Etiology of Foodborne Disease Outbreaks by Food and Season

Agent	Implicated foods	Season
Bacteria		
Bacillus cereus	Starchy food, rice, salads, custards, cereals, puddings, soups	Year round
Brucella	Raw milk, products from sheep, cows, and goats	Year round
Campylobacter jejuni	Meat, poultry, raw milk, mushrooms	Spring, summer
Clostridium botulinum	Home-canned foods, vegetables, fruits, fish, honey (infants)	Summer, fall
Clostridium perfringens	Meat, poultry dishes, sauces, gravies, Mexican foods	Fall, winter, spring
Escherichia coli, including O157:H7	Meat, cheeses, unpasteurized milk, cider, juices, manure fertilized vegetables and fruits, fecally contaminated food	Summer, fall
Listeria monocytogenes	Milk, meats, soft cheeses, manure fertilized vegetables	Year round
Salmonella	High protein food like meat, poultry, fish, eggs, dairy products	Summer
Shigella	Eggs, salads, lettuce, milk, beans, other moist contaminated foods	Summer
Staphylococcus aureus	Ham, poultry, egg salads, pastries	Summer
Streptococcus pyogenes	Milk, deviled eggs, or salads and sandwich spreads made with mayonnaise and eggs	Summer
Vibrio cholerae O1	Shellfish, oysters	Variable
Vibrio cholerae non-O1	Shellfish, oysters	Unknown
Vibrio parahaemolyticus	Shellfish, oysters	Spring, summer, fall
Yersinia enterocolitica	Pork, milk, tofu, poultry, beef	Winter + ?
Chemicals/Toxins/Poisons		
Ciguatera	Barracuda, snapper, amberjack, grouper	Spring, summer
Histamine fish poison (scromboid)	Tuna, mackerel, bonito, skipjack, mahi-mahi	Year round
Heavy metals	Acidic beverages	Year round
Mushroom poisoning	Mushrooms	Spring, fall
Organophosphates	Any contaminated foods	Year round
Monosodium L-glutamate	Chinese food	Year round
Nitrates	Spinach and other row crops kept moist at room temperature	At harvest
Paralytic shellfish poisoning	Shellfish	Summer, fall
Neurotoxic shellfish poisoning	Shellfish	Spring, fall
Parasites		
Cyclospora cayetanensis	Any contaminated food, water, and raw produce	Spring, summer
Cryptosporidium parvum	Any contaminated food and water	Unknown
Entamoeba histolytica	Food or water handled by infected person	Unknown
Giardia lamblia	Food or water handled by infected person	Summer, fall
Taenia saginata	Raw or undercooked beef products, food contaminated with tapeworm eggs	Year round?
Taenia solium	Raw or undercooked pork products, food contaminated with tapeworm eggs	Year round?
Toxoplasma gondii	Any contaminated food	Year round?
Trichinella spiralis	Raw or undercooked meats containing encysted larvae	Year round?
Viral		
Hepatitis A	Oysters, clams, uncooked foods handled by infected persons	Year round
Norwalk agent	Shellfish, salads, clams, oysters, uncooked foods handled by infected persons	Year round

Texas Department of Health Foodborne Illness Chart (Agents listed by first symptoms and onset)

Pathogen/ Poison/ Toxin	Symptom onset	Symptoms (by frequency)	Implicated foods or common vehicles	Habitat/ Reservoir	Specimen source [A B C D]	Minimum amount	Laboratory/Diagnostic tests	Storage & transport instructions [E]	Special instructions
Upper Gastrointestinal Symptoms (nausea, vomiting)									
Metallic salts & heavy metals e.g. copper, zinc, tin, cadmium	<1h	N, V, altered taste sensation	Lemonade, punch, wine, gelatin dessert containing fruit, beer, carbonated drinks	Metallic containers	Blood,[1] urine,[1] vomitus,[1] food[2]	1ml blood in purple top test tube	Metal levels [A]		Call Environmental epidemiologist at 512-458-7269
Nitrites	1-2h	N, V, cyanosis, HA, dizziness, dyspnea, trembling, weakness, fainting	Spinach & other row crops kept moist at room temperature	Nitrification of fields where plants are grown prior to harvest	Food[2]		Nitrite level [A]		Call Environmental epidemiologist at 512-458-7269
Staphylococcus aureus heat stable enterotoxin	0.5-8h mean 2-4h	N, V, D, P, prostration	Meat, seafood, pasta, or salads & sandwich spreads made with eggs or mayonnaise	Nose, throat, skin, food stored at >40 °F	Stool,[1,2] food,[2] wound,[1,2] vomitus,[1,2] throat swab[1,2]	100g food (4oz)	Culture,[1,2] (PFGE if pre-approved by TDH),[2] toxin assay,[2] colony count [1,2]	Food kept at 2-8 °C (35-46 °F); shipped on ice; fully saturate swab for stool, wound, and throat sample; place in Cary-Blair medium	Food<3d old; contact lab[2] for instructions; food specimens accepted only from public health officials or physicians
Bacillus cereus heat stable emetic toxin	1-5h usual 2-4h	N, V	Starchy food, rice, salads, custards, cereals, pudding, soups	Soil, dust, spices, food stored at >40 °F, spore survives heat	Food[2]	100g food (4oz)	Colony count,[2] identification [2]	Refrigerate specimen at 0-4 °C (32-39 °F); **do not freeze specimen**	Food specimens accepted only from public health officials or physicians
Amanita phalloides mushroom heat stable toxin	6-24h	N, V, D, thirst, pupil dilatation, collapse, coma	Food containing mushrooms	Amanita mushrooms (May-June)	Food		Mushroom species identification		Call IDEAS epidemiologist at 512-458-7676
Streptococcus pyogenes	12-72h	Sore throat, F, N, V, runny nose, rash	Milk, deviled eggs, or salads & sandwich spreads made with eggs or mayonnaise	Nose, throat, skin	Food,[2] stool,[1] throat swab,[1] wound swab[1]	100g food (4oz)	Culture,[1,2] identification[1,2]	Food kept at 2-8 °C (35-46 °F); shipped on ice; fully saturate swab for stool, wound, and throat sample; place in Stuarts or Aimes medium	Food<3d old; contact lab[2] for instructions; food specimens accepted only from public health officials or physicians
Lower Gastrointestinal Symptoms (diarrhea, abdominal cramps/pains)									
Vibrio cholerae O1, O139, & *Vibrio* non-O1	hrs-5d usual 2-3d	Watery diarrhea (rice water stools) C, N, V	Food & water contaminated with feces or vomitus; raw or improperly cooked seafood	Shellfish, copepods, or other zooplankton in brackish waters or estuaries	Stool,[2] rectal swab,[2] food,[2] shellfish,[2] serum[1]	100g food, 150g shellfish, 15 unshucked oysters	Culture,[2] identification,[2] typing,[2] toxin testing,[2] paired sera for *Vibrio* antibodies[3]	Refrigerate food sample at 0-4 °C (32-39 °F); stool or rectal swab transported in Cary-Blair medium	Food<3d old; shellfish accepted only from public health officials
Vibrio parahaemo-lyticus	4-30h usual 12-24h	D, C, HA, V, F, wound infections, sepsis	Raw and undercooked seafood	Salt water shellfish; food stored at >40 °F	Stool,[2] shellfish[2]	150g food, 15 unshucked oysters	Culture,[2] identification[2]	Stool transported in Cary-Blair medium; refrigerate food at 0-4 °C (32-39 °F); transport on wet ice and **test within 24h**	Food<3d old; shellfish accepted only from public health officials

Pathogen/ Poison/ Toxin	Symp-tom onset	Symptoms (by frequency)	Implicated foods or common vehicles	Habitat/ Reservoir	Specimen source [A B C D]	Minimum amount	Laboratory/Diagnostic tests	Storage & transport instructions [E]	Special instructions
Bacillus cereus heat labile diarrheal toxin	6-24h	D, C, and sometimes N, V	Starchy food, rice, salads, custards, cereals, pudding, soups	Soil, dust, spices; food stored at >40 °F; spore survives heat	Food,[2] stool[2]	100g food (4oz)	culture,[2] identification,[2] colony count[2]	Refrigerate food sample at 0-4 °C (32-49 °F); **do not freeze specimen**	Food specimens accepted only from public health officials
Clostridium perfringens heat stable spore	6-24h usual 10-12h	C, D	Meat & poultry dishes, sauces, gravies	Dust, soil, human and animal GI tracts; food stored at >40 °F; prefers low oxygen	Stool,[2] food[2]	100g food (4oz)	Culture,[2] identification,[2] colony count[2]	Refrigerate stool and food at 0-4 °C (32-39 °F); **do not freeze specimen**	Food<3d old; food specimens accepted only from public health officials
Salmonella all serotypes	6-72h usual 12-36h	D, C, F, N, V, HA	High protein foods: meat, poultry, fish, eggs	Human & animal intestinal tracts; food stored at >40 °F	Stool,[2] food,[2] blood[2]	100g food (4oz)	Culture,[2] serotyping,[2] identification,[2] PFGE[2]	Stool in Cary-Blair medium	Food<3d old; food specimens accepted only from public health officials
Enteric viruses: *Norwalk*-like	10-50h usual 1-2d	F, N, V, P, D, HA	Shellfish, salads, clams, oysters, food handled by infected person	Humans	Fresh stool[2]	1-10g stool sample in sterile plastic container	Electron Microscopy (testing for outbreak investigations only)	Collect specimen in sterile plastic container; keep at 4 °C (39 °F); **ship to lab immediately**	Collect specimen **within 48h after symptom onset**; obtain approval for testing at virology (512) 458-7318.
Escherichia coli (non-O157)	12-72h	D, C, N	Meats, cheeses, fecally contaminated food	Human & animal (cattle) feces; can grow at refrigeration temperatures	Stool,[2] food[2]	100g food (4oz)	Culture,[2] identification,[2] toxin detection,[2] PFGE[2]	Stool in Cary-Blair medium; ship food cold at 4 °C (39 °F); **do not freeze specimen**	
Shigella species	1-7d usual 1-3d	D, C, F, N, V	Moist mixed foods, salads, milk, beans, food handled by infected person	Humans	Stool,[2] food,[2] blood[1]	100g food (4oz)	Culture,[1,2] PFGE,[2] grouping[2]	Stool in Cary-Blair medium	Food<3d old; food specimens accepted only from public health officials
Yersinia enterocolitica or *pseudo-tuberculosis*	3-7d usual 4-6d	D, F, P, N, V, mimics appendicitis	Pork, milk, tofu, poultry, beef	Pigs, cattle, poultry; grows at 35-40 °F; sensitive to heat at 122 °F	Stool,[2] blood,[1,2] tissue[1,2]	100g food (4oz)	Culture,[1,2] identification[1,2]	Saturate swab with stool and place in Cary-Blair or CIN culture medium	Food<3d old; food specimens accepted only from public health officials
Cyclospora species	1-11d medi-an 7d	D, C, fatigue, N, weight loss; can be shed in stool for more than 28	Contaminated water, food, and raw produce	Water	Stool[2]	Use O & P kit	Acid fast stain exam,[2] O & P exam[1,2]	Stool transported in PVA & formalin (O & P kit)	Stool specimens accepted only from public health officials
Campylobacter jejuni	1-10d usual 3-5d	D, C, N, F, HA, malaise, bloody D	Meat, poultry, milk, mushrooms; food stored at >86 °F	Foods of animal origin	Stool,[1,2] food,[2] rectal swab[1,2]	100g food (4oz)	Culture,[1,2] identification [1,2]	Stool in Cary-Blair medium; ship food cold at 4 °C (39 °F); **do not freeze specimen**	Stool & food specimens only accepted from public health officials

Pathogen/ Poison/ Toxin	**Symptom onset**	**Symptoms** (by frequency)	**Implicated foods or common vehicles**	**Habitat/ Reservoir**	**Specimen source** [A B C D]	**Minimum amount**	**Laboratory/Diagnostic tests**	**Storage & transport instructions** [E]	**Special instructions**
Cryptosporidium parvum	1-12d mean 7d	D, C, N, F, fatigue, HA, V	Any food handled by infected person; fecally contaminated water	Humans, cattle, other domestic animals	Stool[1,2]	Use O & P kit	Acid fast stain exam,[1,2] O & P exam[1,2]	Stool in PVA & formalin (O & P kit)	Stool specimens accepted only from public health officials
Escherichia coli O157:H7	3-8d	Bloody D and C, hemolytic uremic syndrome	Meats, cheeses, unpasteurized milk, cider, juices, manure fertilized fruits & vegetables	Human & animal (cattle) feces; can grow at refrigeration temperatures	Stool,[2] food[2]	100g food (4oz)	Culture,[2] identification,[2] toxin detection,[2] PFGE[2]	Stool in Cary-Blair medium; ship food cold at 4 ᴺC (39 ᴺF); **do not freeze specimen**	
Giardia lamblia	3-25d median 7-10d	D, mucoid fatty stools, gas, C, fatigue, N; shed for months in stool	Food handled by infected person; fecally contaminated water	Humans and other animals	Stool[1,2]	Use O & P kit	Trichrome stain exam[1,2]	Stool in PVA & formalin (O & P kit)	Stool specimens accepted only from public health officials
Entamoeba histolytica	1-8w usual 2-4w	Mucoid or bloody D, F, chills, C	Food handled by infected person; fecally contaminated water	Humans	Fresh stool[2]	Use O & P kit	Culture,[1,2] identification,[1,2] stool trichrome stain exam[1,2]	Stool collected **within 5 hours** and placed in PVA & formalin (O & P kit)	
Taenia saginata	3-6m	Nervousness, insomnia, P, anorexia, weight loss	Raw or undercooked beef products, food contaminated with tapeworm eggs	Intermediate host cattle; human definitive host	Stool[1,2]	Use O & P kit	Identification of parasite segments in stool[1,2]	Stool in PVA & formalin (O & P kit)	Stool specimens only accepted from public health officials
Taenia solium	3-6m	Nervousness, insomnia, P, anorexia, weight loss	Raw or undercooked pork meats, food contaminated with tapeworm eggs	Intermediate host pigs; human definitive host	Stool[1,2]	Use O & P kit	Identification of parasite segments in stool[1,2]	Stool in PVA & formalin (O & P kit)	Stool specimens only accepted from public health officials
Neurological and/or Gastrointestinal (visual disturbances, vertigo, tingling, paralysis)									
Shellfish toxin	0.5-3h usual< 1h	Paresthesias, reversal of hot-cold sensation, muscle aches, D, V	Shellfish, mollusks	Shellfish, mollusks	Shellfish,[2] urine,[1] blood[1]	150g shellfish, 15 unshucked	Toxin assay[C]	Refrigerate food specimen at 0-4 ᴺC (32-39 ᴺF) or freeze	Food specimens accepted only from public health officials
Muscaria-type mushrooms	0.25-2h usual< 1h	Salivation, perspiration, pupil dilatation, and wheezing	Foods containing mushrooms	Mushrooms (May-June)	Mushrooms		Mushroom species identification		Call IDEAS epidemiologist at 512-458-7676
Organophosphate (pesticide)	<1h	N, V, C, D, HA, nervousness, blurred vision, chest pain, cyanosis, confusion, twitching	Contaminated foods	Plants sprayed with pesticides or foods stored in the same area with pesticides	Food,[2] whole blood[1]		Chemical analysis,[2] red cell cholinesterase activity[1]		Call Environmental epidemiologist at 512-458-7269

Pathogen/ Poison/ Toxin	Symptom onset	Symptoms (by frequency)	Implicated foods or common vehicles	Habitat/ Reservoir	Specimen source [A B C D]	Minimum amount	Laboratory/Diagnostic tests	Storage & transport instructions [E]	Special instructions
Ciguatera toxin	1-48h usual 1-6h	Tingling, numbness, dry mouth, pupil dilatation, blurred vision, paralysis	Large predatory reef fish; barracuda, snapper, amberjack, grouper	Large predatory reef fish	Fish,[2] mollusks[2]				Call IDEAS epidemiologist at 512-458-7676
Clostridium botulinum neurotoxins	2h-6d usual 12-36h	Blurred vision, muscle weakness, cranial nerve palsies, descending paralysis, mental status changes, respiratory distress, possible death. In infants "floppy baby syndrome"	Home-canned foods, alkaline foods, lightly cured refrigerated foods, smoked fish. In infants: honey, molasses, and syrups	Soil, plants, marine sediments, and fish	Food,[2] stool,[2] vomitus,[2] gastric aspirate,[2] serum[1,2]	100g food, 10ml blood, or 5ml serum	Culture,[2] toxin assay,[2] toxin typing[2]	Collect representative food specimen, keep at 4 ºC (39 ºF); ship specimen **on cold packs. Do not use dry ice. Do not freeze specimen.** Hold all other suspect canned foods until testing is completed then dispose of properly	Call IDEAS epidemiologist at 512-458-7676 AND TDH LABORATORY AT: 512-458-7318
Organic mercury, lead, arsenic	>72h	Numbness, leg weakness, spastic paralysis, impaired vision, blindness, coma	Crab, shellfish, fish, marine invertebrates	Crab, shellfish, fish, marine invertebrates	Urine		Chemical analysis		Call Environmental epidemiologist at 512-458-7269
Triorthocresyl phosphate	>72h	Gastroenteritis, leg pain, high stepping gait, foot and wrist drop	Cooking oil substitute, contaminated flour, fluid ginger extract, parsley extract (apiol)	Lubricating oil, certain plastic containers, hydraulic fluid	Oil specimen,[2] food[2]		Chemical analysis		Call Environmental epidemiologist at 512-458-7269
Listeria monocytogenes	varies 3-70d median 3w	Flu-like illness (F, chills, muscle aches, N, and/or D), meningitis, neonatal sepsis, cerebritis	Milk, meats, soft cheeses; manure fertilized vegetables	Soil, plants, water; food stored at 30-40 ºF	Food,[2] stool,[2] blood,[1] CSF,[1] tissue biopsy[1]	100g food, 5g stool, 0.5ml serum, 10ml CSF	Culture,[1,2] identification,[1,2] typing[2]	Unpreserved stool in Cary-Blair; isolates shipped on nonglucose slants such as trypticase soy or heart infusion agar; all specimens kept at 4 ºC (39 ºF)	Specimens only accepted from public health officials
Taenia solium Cysticercus(i)	>2m	HA, N, V, seizures	Exposure to human stool or food contaminated with cysticerci	Humans	Blood,[3] CSF[1,3]	10ml blood or 5ml serum	MRI or CT detection of cysticerci (cysts) in the brain,[1] serological assay [1,2,3]	Red top test tube for serum	TDH forwards serum to CDC for cysticercosis serological assay
Allergic (facial flushing, itching)									
Scombroid histamine	<1-3h usual <1h	HA, N, V, P, flushing, itching, peppery taste	Tuna, mackerel, skipjack, bonito, mahi mahi, blue fish	Partially decomposed fish	Fish[2]		Identification of decomposed fish		Call IDEAS at 512-458-7676 or TDH laboratory at 512-458-7318
Monosodium L-glutamate (food additive)	<1h	Mouth numbness, tingling, N, HA: in all when dose >1.5g (less in sensitive people)	Foods prepared with this ingredient	Not applicable	Food[2]		Chemical analysis		Call IDEAS epidemiologist at 512-458-7676

Pathogen/ Poison/ Toxin	**Symptom onset**	**Symptoms** (by frequency)	**Implicated foods or common vehicles**	**Habitat/ Reservoir**	**Specimen source** [A B C D]	**Minimum amount**	**Laboratory/Diagnostic tests**	**Storage & transport instructions** [E]	**Special instructions**
Generalized Infection (fever, chills, malaise, prostration, aches, swollen lymph nodes)									
Salmonella typhi	3d-3m usual 1-3w	Malaise, HA, F, N, V, P, rose spots	Meat, poultry, egg products	Human and animal intestinal tracts; food stored at >40 ºF	Stool,[2] food,[2] blood[1]	100g food (4oz)	Culture,[1] PFGE,[1] serotyping[2]	Collect a stool specimen from the case & ship to laboratory in buffered glycerol saline solution or Cary-Blair transport medium	Collect a stool specimen from the suspected carrier & ship to laboratory in buffered glycerol saline solution or Cary-Blair transport medium
Trichinella spiralis	5-45d usual 8-15d	Periorbital edema, gastroenteritis, F, labored breathing	Raw or undercooked meats containing encysted larvae	Swine, dogs, cats, horses, rats, many wild animals	Blood,[3] tissue biopsy,[2] food (meat)[2]	2 ml serum, 100g food (4oz)	Giemsa stain of tissue biopsy,[2] eosin stain of meat,[2] SAT,[1,2] Bentonite Flocculation[3]		TDH forwards serum to CDC. TDH assays food & tissue biopsy. Call TDH laboratory at 512-458-7318 prior to shipping specimen.
Brucella species	5-60d usual 1-2m	F, myalgia, malaise, HA, arthralgia	Raw milk, products from sheep, cows, goats	Cattle, swine, sheep, goats, deer, kennel dogs, coyotes	Stool,[1] food,[2] blood,[1] gastric washing[1]	2ml serum, 100g food (4oz)	Culture,[1] identification,[1] single and paired SAT[1,2]	Food specimens kept and shipped at 4 ºC (39 ºF); collect blood specimen in red top test tube	Specimens for testing accepted only from public health officials
Toxoplasma gondii	10-23d	F, HA, myalgia, rash	Contaminated foods	Cats, rats, birds, feces, dirt	Blood,[1,2] tissue biopsy[1,2]	2ml serum, 100g food (4oz)	Single serum EIA (IgM),[1] paired sera IFA (IgG),[1] giemsa stain of tissue[1]	Collect blood specimen in red top test tube	TDH lab support only available to epidemiologist to investigate outbreaks
Hepatitis A	15-50d mean 30d	F, N, C, anorexia, later dark urine, jaundice	Oysters, clams, food handled by infected person	Transmitted by fecal/oral route, person to person, shed in stool	Serum [1,2] **Unhemolyzed and not lipemic**	2ml serum	Total IgG,[1,2] single serum IgM anti-HAV[1,2]	Collect blood specimen in red top test tube. Ship at 4 ºC (39 ºF)	TDH lab support available only to epidemiologists to investigate outbreaks

h=hour d=day w=week m=month
C=abdominal cramps D=diarrhea F=fever GI=gastrointestinal HA=headache N=nausea P=abdominal pain V=vomiting
CSF=cerebrospinal fluid EIA=enzyme immunoassay IFA=indirect fluorescent antibody test PFGE=pulse-field gel electrophoresis SAT=serum agglutination test
°C=degrees Centigrade °F= degrees Fahrenheit
IDEAS=Infectious Disease Epidemiology and Surveillance Division TDH=Texas Department of Health

[A] Initial (diagnostic) specimens should be routed to the local hospital laboratory and remaining or reference specimens to the Texas Department of Health (TDH) laboratory. TDH forwards certain specimens for testing to federal laboratories and results may not be available for weeks or months.

[B] Food samples for bacteriological analysis: collect a minimum of 100g (4 oz) and a maximum of 450g (1 lb) for each sample, store and ship in a sterile Whirl Pak bag or sterile plastic container at 0-4 °C (32-39 °F). Frozen foods should remain frozen, however. Send samples to laboratory as soon as the specific food is suspected as a vehicle of transmission. Shellfish samples need to be refrigerated at 0-4° C (32-39 °F) and tested within 24h after collection. Alert the laboratory of need to test food sample and ask for further shipping instructions. Approximate conversions for food measures: 100g=4 ounces; 5ml=one teaspoon; 2ml=20-30 drops

[C] Oyster samples for brevitoxin assay need to be maintained in 100ml of 0.18N HCl per 150-200g (5-7 oz) of shucked oyster meat. Samples can be refrigerated or frozen during shipping.

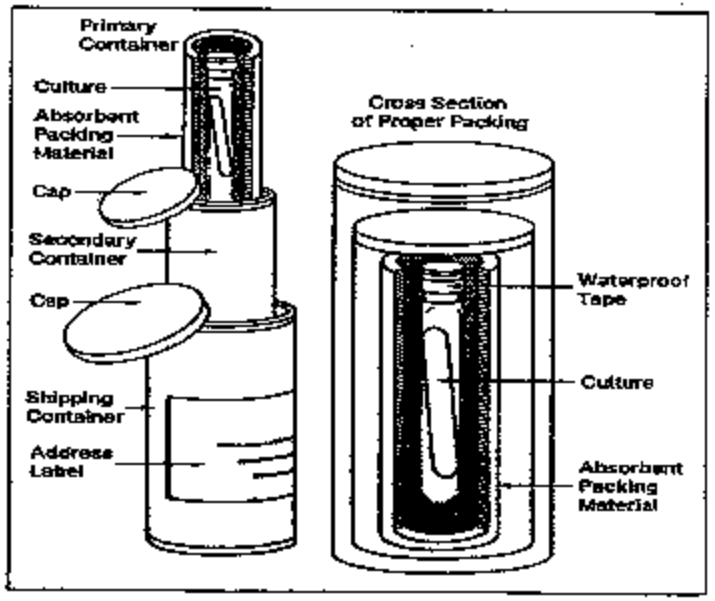
[D] Stool sample analyses require prior approval at (512) 458-7318; shipping containers can be obtained by calling (512) 458-7661; samples for bacteriological culturing are collected in a Cary Blair CultureSwab Transport System (in some cases an unpreserved fresh sample is needed); stool samples for intestinal parasites require division of the sample into two portions: one portion is placed into a vial of formaldehyde, the other in a vial of polyvinyl alcohol (O & P kit); the rectal swab may be shipped without a preservative, in a glycerol saline solution, or inoculated into a specific transport medium depending on the test. Samples may be refrigerated.

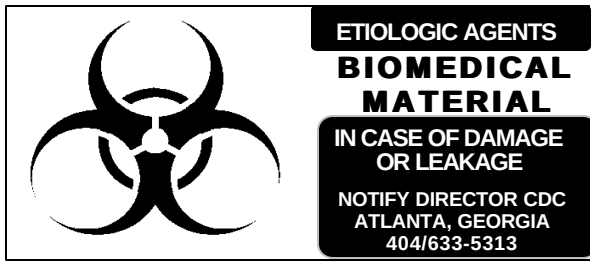
[E] General guidelines: (1) clinical human and animal specimens must be transported in a triple container; (2) the specimen container should hold no more than 50ml of specimen; therefore multiple containers may be necessary; (3) the secondary container must be a durable, screw-capped, leak-proof container and not a bag, and must have sufficient absorbent materials to absorb all the content of the primary container in case of leakage; and (4) the outside or tertiary container must be a fiberboard cylinder with a screw-capped lid or similar material. The inner specimen container must be labeled with the patient's name and or specimen identification number (form ID) exactly the way it is written on the laboratory request form. The proper complete laboratory forms must be included outside the second container. The outermost container must be labeled with the name of the laboratory, its full address, and a return full name and address. **Pure isolates of microorganisms require a biohazard label on the outermost container.**

[1] Initial diagnostic test done at local hospital, clinic, commercial, or nearest health department laboratory.
[2] Call the Texas Department of Health Laboratory (TDH) at (512) 458-7598 for submission, collection, and handling instructions; call (512) 458-7661 to obtain shipping containers for pure cultures.
[3] Reference test forwarded to Centers for Disease Control and Prevention (CDC) laboratory.

(TDH, ON11/98, fbichr11.wpd)

Packaging and Labeling of Samples[E]





(label comes in red on white)

FOODBORNE/WATERBORNE ILLNESS COMPLAINT FORM

DEMOGRAPHICS

Complainant: Is complainant ill? ~ Yes ~ No If no, name of ill person and relationship:	Full address:	Phone: Home- Work-

Birth date:	Sex:	Race:(W=White, B=Black, I=Am Indian, A=Asian, H=Hispanic, O=Other):	Occupation:

Complaint:	Nature of complaint: ~ Illness ~ Contaminated/adulterated food ~ Polluted water ~ Unsanitary establishment ~ Other

Has complainant traveled greater than 50 miles from home (within 10 days prior to onset): ~ Yes ~ No If yes, where and when:	Any recreational water exposure? ~ Yes ~ No ~ Waterpark: where and when_____ Pool: ~ Private ~ Public where and when_____ ~ Natural body oF water: where and when_____

FOOD HISTORY

Other ill persons attending suspect mea (name and phone):	Did ill individual attend any unusual/nonroutine meals (i.e., picnics, barbeques, banquets)? (date and location):

Day oF illness onset Date: Place: Hour: Breakfast items: --- Lunch items: --- Dinner items:	1 day prior to illness onset Date: Place: Hour: Breakfast items: --- Lunch items: --- Dinner items:
2 days prior to illness onset Date: Place: Hour: Breakfast items: --- Lunch items: --- Dinner items:	3 days prior to illness onset Date: Place: Hour: Breakfast items: --- Lunch items: --- Dinner items:

FOOD HISTORY (continued)

4 days prior to illness onset Date:
Place: Hour:
Breakfast items:

Lunch items:

Dinner items:

5 days prior to illness onset Date:
Place: Hour:
Breakfast items:

Lunch items:

Dinner items:

6 days prior to illness onset Date:
Place: Hour:
Breakfast items:

Lunch items:

Dinner items:

7 days prior to illness onset Date:
Place: Hour:
Breakfast items:

Lunch items:

Dinner items:

8 days prior to illness onset Date:
Place: Hour:
Breakfast items:

Lunch items:

Dinner items:

9 days prior to illness onset Date:
Place: Hour:
Breakfast items:

Lunch items:

Dinner items:

CLINICAL DATA

Onset: Date- Time-	Duration oF symptoms:	Is ill person immunocompromised? ~ Yes ~ No	Names oF any known cases exposed to before illness onset:
Physician consulted (name and phone):			

Was Complainant Hospitalized? ~ Yes ~ No If yes, date hospitalized: _____	Hospital: Name Address Phone

SIGNS and SYMPTOMS (Check appropriate signs and symptoms and compare to the TDH Foodborne Illness Diagnosis Chart)

Key symptom notes: **Upper GI=nausea & vomiting** **Lower GI=abdominal cramping & diarrhea**
Allergic=flushing & itching **Neurological= visual disturbance, dizziness, & paralysis**

Intoxication
(acute & chronic)

- G Bloating
- G Burning sensation

Where?_____

- G Cyanosis
- G Dehydration
- G Excessive salivation
- G Flushing
- G Foot/wrist drop
- G Insomnia
- G Metallic taste
- G Nausea
- G Pallor
- G Pigmentation
- G Prostration
- G Scaling of skin
- G Thirst
- G Weight loss
- G White bands on fingernails
- G Vomiting

Enteric infections:

- G Abdominal cramps
- G Chills
- G Constipation
- G Diarrhea
  - G bloody
  - G greasy
  - G mucoid
  - G watery

No episodes per day_____

G Fever_____ºF

Generalized infections:

- G Cough
- G Edema
- G Headache
- G Jaundice
- G Lack of appetite
- G Malaise
- G Muscular aching
- G Perspiration
- G Stiff neck/joints
- G Swollen lymph nodes
- G Weakness

Neurological illness:

- G Blurred vision
- G Coma
- G Delirium
- G Difficulty speaking
- G Difficulty swallowing
- G Dizziness
- G Double vision
- G Irritability
- G Numbness
- G Paralysis

Pupils: G Constricted
G Dilated
G Fixed

Comments:

LABORATORY RESULTS

Laboratory name and phone number:	Date	Type			Result		
		Stool	Blood	Other	Organism isolated	Serologic results	Normal value

Investigator name:_____ Investigator phone:_____

PROGRAM REQUESTING ANALYSIS
_____I.D.E.A.S. [00000003]
_____MANUFACTURED FOODS [00000021]

FOOD SAMPLE FORM G-22A
TEXAS DEPARTMENT OF HEALTH

ONE FORM PER SPECIMEN REQUIRED

REASON FOR TESTING: _____ROUTINE [COHORT TEST 8]
_____FOOD BORNE OUTBREAK [COHORT TEST 8]

Sample is : _____
(Describe food sample, ie potato salad)

Date Collected: ____|____|____ Time Collected: ____|____ A or P Collected By: _____

Facility name or Person from whom sample collected: _____

Sample Number: _____ Sub Number _____

Test Desired (For ROUTINE samples only): _____

FOR OUTBREAK LINKED SAMPLES - MUST BE COMPLETED

OUTBREAK LOCATION: [CITY] _____ PH REGION _____

Brand: _____ Code: _____

Product: _____ Seal: _____

Size: _____ Condition: _____

Brief description of patient's sign & symptoms: _____

Note: EACH TEST REQUIRES ≥ 4 OZ Sample - Repeat, EACH test!

Requested Test: (check)

___ Salmonella ___ Shigella ___ Listeria
___ E coli 0157 ___ Bacillus cereus ___ Campylobacter
___ Clostridium perfringens ___ Clostridium botulinum ___ Yersinia
___ Yeast & Mold Count ___ Aerobic Plate Count ___ E coli MPN
___ Staphylococcus [__Toxin or ___ Culture]

REMARKS: